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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,141	01/31/2000	Mark J. Hampden-Smith	SMP-023-2-1	4450
7590	04/20/2004			
David F. Dockery MARSH FISCHMANN & BREYFOGLE LLP 3151 S. Vaughn Way, Suite 411 Aurora, CO 80014			EXAMINER TALBOT, BRIAN K	
			ART UNIT 1762	PAPER NUMBER
DATE MAILED: 04/20/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/495,141	Applicant(s) HAMPDEN-SMITH ET AL.	
	Examiner Brian K Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 12-20, 24-38
- 4) ☒ Claim(s) 12-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/8/04 has been entered.

2. Claims 12-20 and 24-38 remain in the application.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 12-15, 17-20, 25-29, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (5,644,193) in combination with Oshima et al. (5,932,139).

Matsuda et al. (5,644,193) teaches a phosphor coating for cathode ray tubes, fluorescent lamps and radiation screens. The phosphor coating suspension includes spherical particles having an average particle size of from 0.5-20 microns. The phosphor particles can be oxides or sulfide of phosphor. The coating can be applied by syringe injection.

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Matsuda et al. (5,644,193) fails to teach that the phosphor particles are hollow (claim 18) or that the coating can be applied by ink-jet in an x-y fashion.

Oshima et al. (5,932,139) teaches hollow phosphor particles applied by ink-jet printing.

Therefore, it would have been within the skill of one practicing in the art to have modified Matsuda et al. (5,644,193) process by forming the phosphor coating with hollow particles and applying the coating by ink-jet as evidenced by Oshima et al. (5,932,139) because of the expectation of achieving similar results.

While the Examiner acknowledges the fact that Matsuda et al. (5,644,193) in combination with Oshima et al. (5,932,139) fail to specifically teach the syringe or ink-jet coating being controllable in an x-y grid, it is the Examiner's position that this would have been an inherent function of ink-jet printing and an automated syringe. It is further noted that these are the same coating techniques claimed and hence the Examiner can draw no other conclusion as to this limitation. If Applicant disagrees, Applicant is invited to supply a showing or reasoning why the claimed ink-jet and syringe are x-y controllable and that the prior art's same devices are not.

Claims 16,24,30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (5,644,193) in combination with Oshima et al. (5,932,139) further in view of Chadha (5,662,831).

Matsuda et al. (5,644,193) in combination with Oshima et al. (5,932,139) fail to teach coating being performed on a flat panel display.

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Chadha (5,662,831) teaches luminescent phosphor coating on articles such as field emission displays and plasma displays and articles relating thereto (col. 1, lines 10-13 and col. 2, lines 40-42). Particles sizes of less than 3 microns and liquid medium including water, alcohols, etc. is taught.

Therefore, it would have been obvious at the time the invention was made for one skilled in the art to have had a reasonable expectation of achieving similar success for performing the phosphor coating process of Matsuda et al. (5,644,193) in combination with Oshima et al. (5,932,139) on a FED or PDP as evidenced by Chadha (5,662,831).

Response to Amendment

5. Applicant's arguments filed 4/8/04 have been fully considered but they are not persuasive.

Applicant argued that Matsuda teach coating uniform non-pattern phosphor coating since the entire substrate is coated and hence would not be combinable with an ink-jet machine for coating.

The Examiner disagrees. In the broadest sense of the word, a "pattern" could include coating the entire substrate. The term "pattern" is not limited to a specific design. Hence, the claimed limitations are met by the references. In addition, an ink-jet machine can also be used to print entire substrates contrary to Applicant's arguments. Hence, Applicant's argument that the references are not combinable is unfounded.

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Applicant argued that the reference do not recognize the advantages associated with using spherical particles.

While the Examiner acknowledges this fact, the combination of references teaches utilizing spherical particles and hence would inherently possess the advantages associated with their use.

Applicant argued that the prior art fails to teach coating pixel regions.

The Examiner disagrees. Flat panel displays are know to have pixel regions covered with phosphor powders and Chadha (5,662,831) teaches phosphor coatings of FED's and PDP's.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 6AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.

A handwritten signature in black ink, appearing to read "B. K. Talbot", with a long horizontal stroke extending to the right.

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT
April 16, 2004